

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. - 9. cancel

10. (new): An automatic programming method of dividing a machining area into a first process region in which one end of a work model is held for a machining and a second process region in which other end of the work model is held for the machining, and creating a program for controlling a numerical control unit based on the division of the machining area, the automatic programming method comprising:

 a first process including calculating a volume of the machining area; and

 a second process including

 calculating a process-dividing position that evenly divides the calculated volume of the machining area in a direction of a turning axis as a process-dividing position indicating a boundary between the first process region and the second process region;

 determining a region from the process-dividing position to the one end of the work model as the first process region; and

 determining a region from the process-dividing position to the other end of the work model as the second process region.

11. (new): The automatic programming method according to claim 10, wherein

the calculating of the first process includes

dividing the volume of the machining area, excluding an end-face machining area where an end-face machining is performed for both end faces in a direction of a turning axis from the whole machining area into an inner-diameter machining side and an outer-diameter machining side; and

calculating volumes of the inner-diameter machining side and the outer-diameter machining side, respectively, and

the calculating of the second process includes

calculating a position that evenly divides the volume of the inner-diameter machining side as a process-dividing position on the inner-diameter machining side; and

calculating a position that evenly divides the volume of the outer-diameter machining side as a process-dividing position on the outer-diameter machining side.

12. (new): The automatic programming method according to claim 11, wherein

the calculating of the first process further includes

obtaining the machining area excluding the end-face machining area from the whole machining area;

dividing a turning area where a turning is performed from among the machining area excluding the end-face machining area into the inner-diameter machining side and the outer-diameter machining side; and

calculating volumes of the inner-diameter machining side and the outer-diameter

machining side, respectively, and

the calculating of the second process further includes

deriving a position that evenly divides the volume of the turning area on the inner-diameter machining side as the process-dividing position on the inner-diameter machining side;

and

deriving a position that evenly divides the volume of the turning area on the outer-diameter machining side as the process-dividing position on the outer-diameter machining side.

13. (new): An automatic programming method of dividing a machining area into a first process region in which one end of a work model is held for a machining and a second process region in which other end of the work model is held for the machining, and creating a program for controlling a numerical control unit based on the division of the machining area, the automatic programming method comprising:

calculating a distance obtained by adding a predetermined length to a chucking allowance of a jig model at a first process;

calculating a position away from one end of the work model by the calculated distance in a direction of a turning axis as a process-dividing position indicating a boundary between the first process region and the second process region;

determining a region from the process-dividing position to the one end of the work model as the first process region; and

determining a region from the process-dividing position to the other end of the work

model as the second process region.

14. (new): A computer-readable recording medium that stores a computer program for dividing a machining area into a first process region in which one end of a work model is held for a machining and a second process region in which other end of the work model is held for the machining, and creating a program for controlling a numerical control unit based on the division of the machining area, wherein

the computer program causes a computer to execute:

a first process including calculating a volume of the machining area; and

a second process including

calculating a process-dividing position that evenly divides the calculated volume of the machining area in a direction of a turning axis as a process-dividing position indicating a boundary between the first process region and the second process region;

determining a region from the process-dividing position to the one end of the work model as the first process region; and

determining a region from the process-dividing position to the other end of the work model as the second process region.

15. (new): A computer-readable recording medium that stores a computer program for dividing a machining area into a first process region in which one end of a work model is held for a machining and a second process region in which other end of the work model is held for the

machining, and creating a program for controlling a numerical control unit based on the division of the machining area, wherein

the computer program causes a computer to execute:

calculating a distance obtained by adding a predetermined length to a chucking allowance of a jig model at a first process;

calculating a position away from one end of the work model by the calculated distance in a direction of a turning axis as a process-dividing position indicating a boundary between the first process region and the second process region;

determining a region from the process-dividing position to the one end of the work model as the first process region; and

determining a region from the process-dividing position to the other end of the work model as the second process region.

16. (new): An automatic programming device that divides a machining area into a first process region in which one end of a work model is held for a machining and a second process region in which other end of the work model is held for the machining, and creates a program for controlling a numerical control unit based on the division of the machining area, the automatic programming device comprising:

a volume calculating unit that calculates a volume of the machining area; and

a process dividing unit that calculates a process-dividing position that evenly divides the calculated volume of the machining area in a direction of a turning axis as a process-dividing

position indicating a boundary between the first process region and the second process region, determines a region from the process-dividing position to the one end of the work model as the first process region, and determines a region from the process-dividing position to the other end of the work model as the second process region.

17. (new): The automatic programming device according to claim 16, wherein

the volume calculating unit divides the volume of the machining area, excluding an end-face machining area where an end-face machining is performed for both end faces in a direction of a turning axis from the whole machining area into an inner-diameter machining side and an outer-diameter machining side, and calculates volumes of the inner-diameter machining side and the outer-diameter machining side, respectively, and

the process dividing unit calculates a position that evenly divides the volume of the inner-diameter machining side as a process-dividing position on the inner-diameter machining side, and calculates a position that evenly divides the volume of the outer-diameter machining side as a process-dividing position on the outer-diameter machining side.

18. (new): The automatic programming device according to claim 17, wherein

the volume calculating unit obtains the machining area excluding the end-face machining area from the whole machining area, divides a turning area where a turning is performed from among the machining area excluding the end-face machining area into the inner-diameter machining side and the outer-diameter machining side, and calculates volumes of the inner-

diameter machining side and the outer-diameter machining side, respectively, and

the process dividing unit derives a position that evenly divides the volume of the turning area on the inner-diameter machining side as the process-dividing position on the inner-diameter machining side, and derives a position that evenly divides the volume of the turning area on the outer-diameter machining side as the process-dividing position on the outer-diameter machining side.

19. (new): An automatic programming device that divides a machining area into a first process region in which one end of a work model is held for a machining and a second process region in which other end of the work model is held for the machining, and creates a program for controlling a numerical control unit based on the division of the machining area, the automatic programming device comprising:

a process dividing unit that calculates a distance obtained by adding a predetermined length to a chucking allowance of a jig model at a first process, calculates a position away from one end of the work model by the calculated distance in a direction of a turning axis as a process-dividing position indicating a boundary between the first process region and the second process region, determines a region from the process-dividing position to the one end of the work model as the first process region, and determines a region from the process-dividing position to the other end of the work model as the second process region.